

Based on the potential kick-out area and area 3a and 3b boundary lines, there appears to be an overlap of MSD areas around and overlooking Sector 2 and D-1. Should the MSD be revised to reflect the larger of the two MSD's in areas of overlap?

**Response:** As previously discussed, to further clarify the MSDs, the single map contained in the 29 September 2000 MFR has been replaced with three separate color-coded maps (figure 1, 2, & 3). The maps reflect a MSD of 200 feet for both Sectors so there is no larger MSD. The original MSD Memorandum For Record (MFR) of 29 September 2000 has been revised by adding the three figures (see attachment (e)).

16. Page 3: **Map:** The MSD for the D-1 area, the western portion of the south valley and the northern portion of the South Valley is not clearly understood. Please provide the approved MSD that should be used in these and any other undefined areas on the Tourtelot site.

**Response:** A detailed response has been provided under section 3(c) of the 11 December 2000 MFR. Also see Figures 1, 2, and 3 of attachment (e).

17. Please provide a discussion of "hazardous fragment."
1. What is a "hazardous fragment"?
  2. Define what makes up a hazardous fragment?
  3. How hazardous is a "hazardous fragment"?
  4. How large is a "hazardous fragment"?
  5. What is the potential or likely damage to a person hit with a "hazardous fragment"?
  6. At what distance from the uncontrolled detonation does a piece of fragment become a "non-hazardous fragment"?

**Response:** A hazardous fragment is defined by DOD 6055.9-STD as one having an impact energy of 58 ft-lb or greater. The size of a hazardous fragment may be large or small. Mass and velocity determine the energy, which in turn determines whether it is a hazardous fragment, or not. At velocities achieved during detonation, fragments smaller than ¼ ounce will not be hazardous.

To give an idea of the other end of the scale, a 20 lb. bowling ball dropped on your foot from 3 feet high will impact with 60 ft-lb of energy and thus deliver the energy of a hazardous fragment.